

REMARKS

All of the claims were rejected under Section 103(a) as being unpatentable over Hilton in view of Ghamaty and/or Elsner. Applicant requests reconsideration.

The only independent claim has now been amended to limit Applicant's patent claims to a thermoelectric module with n-legs having alternating layers of silicon and silicon carbide with the direction of heat flow and current flow parallel to the interfaces between the layers. The combination of the teachings of the three cited prior-art patents does not teach or suggest the present invention. The only suggestion of silicon and silicon carbide layers is in the Hilton patent which is not a thermoelectric device, although it does describe an electronic device. However in Hilton's device there is no apparent heat flow and the current flow is perpendicular to the layers and their interfaces (see FIG. 1 of Hilton). Applicants have shown with actual test data performance improvements of almost 300 percent over prior art efficiencies (14% as compared to 5%) with projected efficiency improvements of 600 percent (30% as compared to 5%). Nothing in the prior art suggests the use of thin layers of Si and SiC for the n-legs of thermoelectric modules. There is nothing in the prior art to suggest the combination of the Hilton teachings with the teachings of Elsner and Ghamaty. Furthermore, if the combination were made it would not work. The combination would not produce a workable thermoelectric module. The Hilton device is an avalanche photodiode. Photodiode technology is completely different from thermoelectric technology. Thus, clearly there is no suggestion in these prior art patents to combine their teachings and clearly any such combination would not produce the present invention.

Applicants have cancelled Claims 10 and 11 to make moot their rejection.

Conclusion

The combination suggested by the Examiner is not suggested anywhere in the prior art and if the combination were made, it would not work as a thermoelectric device. For the reasons given above Applicants submit that the present invention as claimed is a very important advancement in thermoelectric technology amounting to tremendous improvements in efficiencies which are not disclosed or suggested by the cited prior art or to the best of Applicants knowledge, any other prior art. Therefore Applicants respectfully request that the outstanding claims be allowed and the application be allowed to issue as a patent.

Respectfully submitted,



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